

CLAIMS

What is claimed is:

1 1. A CMOS imager system comprising:
2 an active pixel sensor;
3 a column buffer connected to the active pixel sensor; and
4 an analog-to-digital (A/D) converter co-located with the active pixel sensor and
5 column buffer, such that a transmission path between the column buffer and the A/D
6 converter acts primarily as a resistance, rather than a reactance.

1 2. The CMOS imager system of Claim 1, further comprising an analog programmable
2 gain amplifier connected between the column buffer and the A/D converter, such that a
3 transmission path between the analog programmable gain amplifier and the A/D converter
4 acts primarily as a resistance, rather than a reactance.

1 3. The CMOS imager system of Claim 2, wherein the active pixel sensor comprises
2 an access supply, a tapered reset supply and a source supply.

1 4. The CMOS imager system of Claim 3, wherein the A/D converter is a high-speed
2 converter have 12 bit or greater resolution.

1 5. The CMOS imager system of Claim 4, wherein the column buffer has gain and
2 fixed-pattern noise (FPN) suppression.

1 6. The CMOS imager system of Claim 5, wherein the analog programmable gain
2 amplifier has tunable electronic bandwidth.

1 7. A digital video system comprising:
2 an active pixel sensor;
3 a column buffer connected to receive an output from the active pixel sensor;
4 an analog programmable gain amplifier connected to the column buffer;

5 an analog-to-digital (A/D) converter connected to the analog programmable gain
6 amplifier and co-located with the active pixel sensor, column buffer and analog
7 programmable gain amplifier, such that a transmission path between the analog gain amplifier
8 and the A/D converter acts primarily as a resistance, rather than a reactance;

9 a digital programmable gain amplifier connected to an output of the A/D converter;
10 and

11 a digital video interface connected to an output of the digital programmable gain
12 amplifier.

1 8. The digital video system of Claim 7, wherein the active pixel sensor comprises an
2 access supply, a tapered reset supply and a source supply.

1 9. The digital video system of Claim 8, wherein the A/D converter is a high-speed
2 converter have 12 bit or greater resolution.

1 10. The digital video system of Claim 9, wherein the column buffer has gain and
2 fixed-pattern noise (FPN) suppression.

1 11. The digital video system of Claim 10, wherein the analog programmable gain
2 amplifier has tunable electronic bandwidth.